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"Cardamom" is published as a bimonthly in English, Malayalam, Tamil and Kannada.

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Price per copy: Re. 1/-
Annual Subscription: Rs. 6/-

Subscription may be sent by M. O. or Bank Draft drawn in favour of the Secretary, Cardamom Board.

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CARDAMOM

A Journal devoted to the promotion of
Cardamom Industry in India

Vol. 10

MAY - JUNE 1978

No. 3

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ON THE COVER

Shri S. Baskar, Member, Cardamom Board speaking on the occasion of the taking possession of the plantation intended for the Board's research station. S/shri K. G. Nayar, Secretary, Cardamom Board and Thomas Mathews, Farm Manager, Cardamom Board can be seen to his left.

Editorial:

WE LOOK FORWARD

For the first time in its history, the cardamom plantation industry in India has recorded unprecedented achievements during 1977-78 in production, export, export earnings and unit value realisation. This progress in the cardamom industry can be rightfully attributed to the services rendered by the Board and the whole-hearted co-operation extended to it by the various sectors of the industry. Various innovative ideas have gone into the making of this golden year and many others are in the anvil to maintain this momentum. In this context, it may be remembered that there was bumper production during 1970-71 and 1971-72, but the export earnings had not risen to an appreciable level due to low export and unit value realisation. However, the achievements of this year have corrected the notion of the planters, traders and others that when production increases the price will go down. The year 1977-78 has seen a production of 3800 M.T., export of 2730 M.T., export earnings of Rs. 48 crores and a unit value realisation of Rs. 175/- per kg.

The cardamom plantation industry of our country has tremendous potential for growth in all directions. What is required is formulation of production and marketing strategies according to the environments and requirements of a particular year and effective implementation of the same enlisting the co-operation of all concerned. During last year it was possible to make use of all the opportunities available by infusing faith and confidence in planters and others by disseminating the right information at the right time.

The achievements of 1977-78 are only a beginning of similar achievements anticipated in the years to come. The cardamom industry of our country has every reason to hope for a better production and better price this year as well. Next crop season of cardamom is in the offing. Once again it is time for the Board and the various sectors of the industry to join hands together in order to emboss another chapter of marvellous achievements in its history thereby ameliorating the position of the cardamom plantation industry and the nation as well.

Some Grave thoughts on Quality Cardamom

A conference of the large growers of cardamom was convened on 18th May 1978 at Ernakulam with the objective of evolving suitable measures for improving the quality and quantity of cardamom produced in the country. Inaugurating the conference Shri S. G. Sundaram, Chairman, Cardamom Board emphasised the need for devising ways and means to achieve maximum production of high quality cardamom while indicating the urgent need for taking up field studies for increasing the production of bold green cardamom, he informed the growers that the Board's long awaited desire of owning a research station of its own for conducting such studies has come into being. He congratulated the large growers for the part played by them in bringing up the cardamom production during the last season and thereby enabling the industry to achieve a unique record in export earnings. He mentioned that the cardamom production during 1978-79 season is estimated to be almost equal to last year's taking into consideration the climatic conditions that prevailed during the early part of the year. He further said that the survey conducted by the Board in the Middle East and Nordic countries in collaboration with the International Trade Centre revealed that there is vast scope

for increased export of bold green cardamom to Middle East countries.

Shri K. V. S. Krishna representing the Travancore Tea Estates elucidated the importance of adopting proper harvesting techniques, shade regulation and pest control measures as well as curing techniques for getting bold and green Cardamom. According to him the maturity of the crop at the time of harvest is very important in getting the desired size, shape and colour of the dried produce. It should be picked when the capsules are just short of full ripeness. By cutting the terminal ends of the shoots, it may be possible to get bigger sized capsules. The produce should be harvested and held in containers with proper aeration and should be cured with the least delay to avoid deterioration. He also mentioned that *Eucalyptus grandis* is found to be the best shade tree for cardamom and cardamom grown under the shade of this tree has given good yield. He also stressed the need for taking up systematic plant protection operations for control of thrips which generally cause shrivelled and malformed appearance to the dried produce. Regarding curing of cardamom he informed that the tea trough system adopted in his group of estates has the advantages of requiring less space

compared to the conventional system which requires massive constructions. It is also possible to get the produce cured in a shorter period by this technique.

Shri K. V. George, Director, Cardamom Board explained the technique of curing cardamom practised in Gautemala using through flow hot air. He also mentioned that in his recent talk with a representative of a firm dealing with manufacture of driers for drying vegetable seeds, it was suggested to adopt a curing technique using dry air by passing hot air through silica gel. By this technique it would be possible to get the produce dried within a period of about 4 hours, at a comparatively low temperature, ensuring good colour to the produce.

Shri S. Baskar, Member, Cardamom Board in his speech emphasized the importance of application of fertilizers, adoption of sprinkler irrigation, mulching and proper curing methods for getting bold and green cardamom. Regarding sprinkler irrigation he suggested that the sprinkling should be done during the months of January, February and March and that irrigation should not be done in the month of April to ensure proper results. He mentioned that complex fertilizers (14:28:14) applied in the month of April has given excellent results. He also suggested that some improve-

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Shri S. G. Sundaram, Chairman, Cardamom Board, delivering the inaugural address at the large cardamom growers conference. Seated at his right are S/Shri S. Basker and R. J. Jayaram Singh, Members, Cardamom Board. To his left is Shri K. V. George, Director, Cardamom Board.

ments in the conventional system of curing should be made. The curing technique adopted by the Manjola Estate of Bombay Burmah Trading Corporation using dry air is worth trying. Making shallow trenches around the plants about a foot away from the base of the plant and burying the mulch materials in the soil were also helpful for the proper growth and yield of cardamom.

Shri C. V. Paul of Waterfall Estate in Kallar-vattiar said that adoption of sprinkler irrigation has given excellent results in achieving double the yield with a noticeable increase in the bulk density of the crop upto 15%. That is to say, an estate crop with an average density of 350 gms. per litre usually attain more than 400 gms. per litre, if properly irrigated. Irrigation not only helps to increase the yield to the extent of doubling the crop, but also enhances the quality of the capsules in terms of density.

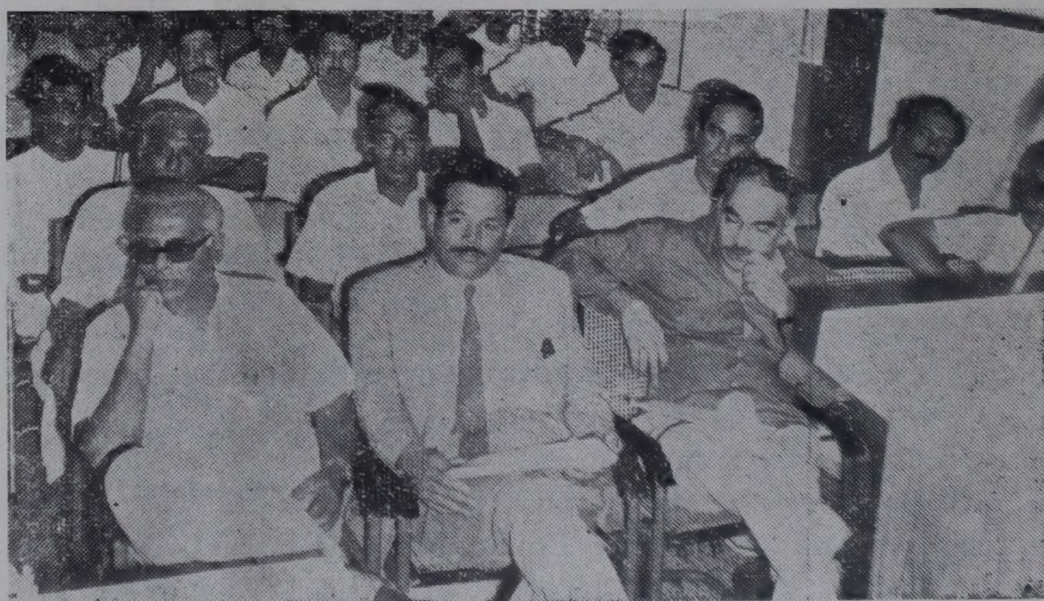
Shri K. M. Apaiah, Consolidated Coffee Estates Ltd., Pollibetta,

stated that bold and green cardamom is generally obtained in the 2nd and 3rd rounds of harvest in his area and that drying of cardamom in electric driers could not retain the green colour during storage. Shri S. K. J. Rajarathinam, Chemmannar Estate, Udumbanchola, informed that his experience indicates that there is definite increase in production by adopting sprinkler system of irrigation in cardamom.

Shri K. V. George, Director, gave a detailed account of the salient features of cardamom cultivation in Guatemala. He also mentioned that taking into consideration the annual enriching of cardamom soils through shade tree leaf fall, the fairly high nutrient status of cardamom soils except phosphates and the comparatively low nutrient removals through the harvested Cardamom one would not expect any great need for fertilizer application in cardamom fields.

Shri K. V. S. Krishna in this regard reported that application of Rock phosphate at the rate of 1 kg. per plant at the time of planting boosted the growth and helped in the better establishment of the seedlings in the field. He also suggested application of complex fertilizers for getting increased yield.

Shri N. Bharathah Pillai, Market Development Officer, Cardamom Board, gave a brief account of the recent market survey conducted in co operation with the Inter-



A view of the participants

national Trade centre, Geneva and pointed out that there is an increased demand for bold green Cardamom in the Middle East countries and for lower grades in in the European countries.

In his concluding speech Shri S. G. Sundaram remarked that discussions on various aspects of cardamom cultivation were fruitful and that these discussions would be useful for streamlining the Board's future development programmes. He also gave a detailed account of the marketing strategies to be adopted for getting maximum price during the ensuing crop season. The experience during the last season has disproved the contention that there will be a fall in unit value when production increases and that by adopting proper market-

ing strategies, it should be possible to ensure reasonable price for cardamom during the next season also. As a measure for achieving this goal he requested the large growers to regulate the flow of the bold green cardamom into the market in such a way as to have sufficient quantities of this high quality cardamom in the market for a longer period of at least 9 months. This could be made possible only by large growers who will have the facility of proper grading and holding capacity. The tendency to push the entire produce into the market should also be discouraged. He also pointed out the need for reducing the number of Agmark grades now fixed for cardamom to avoid possible confusion among the importers. □

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Under the Japanese import regulations import of cardamom has been brought under G. S. P. benefit. The import duty for cardamom is as follows:-

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Bee-keeping in Cardamom Plantations

N. S. PARAMESWAR, H. S. HARALAPPA, H. P. MAHESHA GOWDA

Regional Research Station, Mudigere (Karnataka)

Cardamom the 'Queen of Spices', has excelled pepper, the king, re-writing 5,000 year old spices export history with a record export of 2,700 tonnes. With Rs. 47 crores in 1977-78, a triple rise in 3 years, cardamom has left pepper trailing with Rs. 40 crores.

ELETTARIA CARDAMOMUM Maton belongs to the natural order Scitaminae, family Zingiberaceae. It is a perennial plant and produces panicles at the bulged portion of the pseudostem just above the ground level. It produces bisexual flowers in which the stigma is placed little above the stamen. Therefore some external agency is essential to effect pollination.

The observations revealed that the insects play an important role in general and the bees in particular in effecting pollination in cardamom. But, there is no literature available about the insect pollinators in cardamom. Therefore, an attempt has been made at Regional Research Station, Mudigere (Karnataka) in order to find out the major insects that play an important role in effecting pollination in cardamom.

A small plot having about 300 plants of prostrate variety of cardamom was selected for this study. It was observed that the maximum number of flowers were opened during early hours of the day in the months of June, July, August and September when the flowering is in its peak. The study revealed that the bees play an important role in effecting pollination. Further, it was observed that when a bee visits the flower in a particular plant, it does not move to the next plant unless it completes its visit to almost all the flowers in that particular plant. The shade plants shed their leaves continuously and the fallen leaves cover the panicles which trail on the ground. This hinders the bees to reach flowers to effect pollination. Therefore, the panicles should be exposed to the bee-visits by removing the dropped leaves of shade plants which covered the panicles.

Fifty panicles of the same age bearing about 50 flowers each were selected from different plants. These panicles were inserted in 4" width plastic cylin-

ders having both ends open. The open ends were covered with thin muslin cloth so that the insects should not move in or out of the covered cylinders. It was observed that there was no fruitset taken place in the enclosed panicles. Whereas there was a perfect fruitset in the open panicles. This clearly showed that the insects play an important role in effecting pollination in cardamom. In the early hours of the day, the bees movement was more and they were very busy in effecting pollination in cardamom. In addition to bees, ants and flies also effect pollination to a certain extent. The percentage of pollination effected by bees, ants and flies was 92, 5 and 3 percent respectively.

Therefore, it is essential to maintain beehives in the cardamom gardens in order to increase the percentage of pollination and in turn it increases cardamom yield. The crops of honey and bee-wax which are obtainable make bee-keeping profitable. □

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COCOA-A BOON TO THE FARMERS

M. S. JOSEPH*

The Cocoa tree, *Theobroma cacao* is indigenous to the tropical forests of South America. The main Cocoa growing countries in the world are Ghana, Nigeria, Ivory Coast, Brazil, West Indies, El Salvador, New Guinea, Cameroon, Trinidad and Ecuador. Malaysia and Ceylon are the leading Cocoa producing nations in Asia. The world production of Cocoa is in the region of 1,500,000 tons. The African countries account for about 80% of world production, Ghana being the largest producer in the world.

Though Cocoa was introduced to India on a plantation scale about 10 years back, the farmers started showing increased interest only since the last 3 - 4 years. The possibilities of growing Cocoa in South India as an intercrop in mature coconut and arecanut gardens and as an undercrop in thinned jungle has been undoubtedly established already. Considering the agro-climatic factors, Cocoa growing in India is mainly confined to the West-Coast areas of South India only. As in the case of other tropical plantation crops Kerala will be the largest producer of this crop

also within a few years. The future of this new comer among the plantation crops is very bright in the context that the present production is only about 5% of the domestic demand.

COCOA VARIETIES

There are two major varieties of Cocoa; Criollo and Forastero. Criollo Cocoa has cotyledons which are white when fresh and Cinnamon-coloured after fermentation, while the cotyledons of Forastero Cocoa are mauve when fresh and dark chocolate brown after fermentation. Criollo pods are usually dark red and have a pronounced point and rough surface while Forastero pods are generally green and the colour changes to yellow when ripe, with a smooth surface. However, the bean colour is the basic botanical difference.

Other varieties of Cocoa are Trinitario Cocoa originating from Trinidad which has a Forastero type bean. Amelonado Cocoa is grown throughout West Africa and Amazon Cocoa originated in the upper Amazon valley of South America. The Amazon have proved to be outstanding in vigour and yield and form the

basis for the improved planting material of the Forastero variety that is now available.

The Criollo variety, because of its lower adaptability, susceptibility to drought and diseases, irregular bearing habits and lower yield potential is not encouraged on a plantation scale anywhere in the world. The superiority of Forastero variety over Criollo under Indian conditions necessitated a review of the early ruling that only Criollo material was to be planted in India. From 1970 onwards only Forastero seedlings are distributed from the nurseries of Cadbury and State Agricultural Departments.

ENVIRONMENTAL CONDITIONS REQUIRED BY COCOA

CLIMATE

Cocoa is a tropical crop. The main Cocoa growing areas are situated within 10° North and South of the equator. In South India, Cocoa can be cultivated upto an elevation of 800 metres, but areas below 500 metres are the best.

*Assistant Cocoa Advisor, Cadbury India Ltd., Kottayam.

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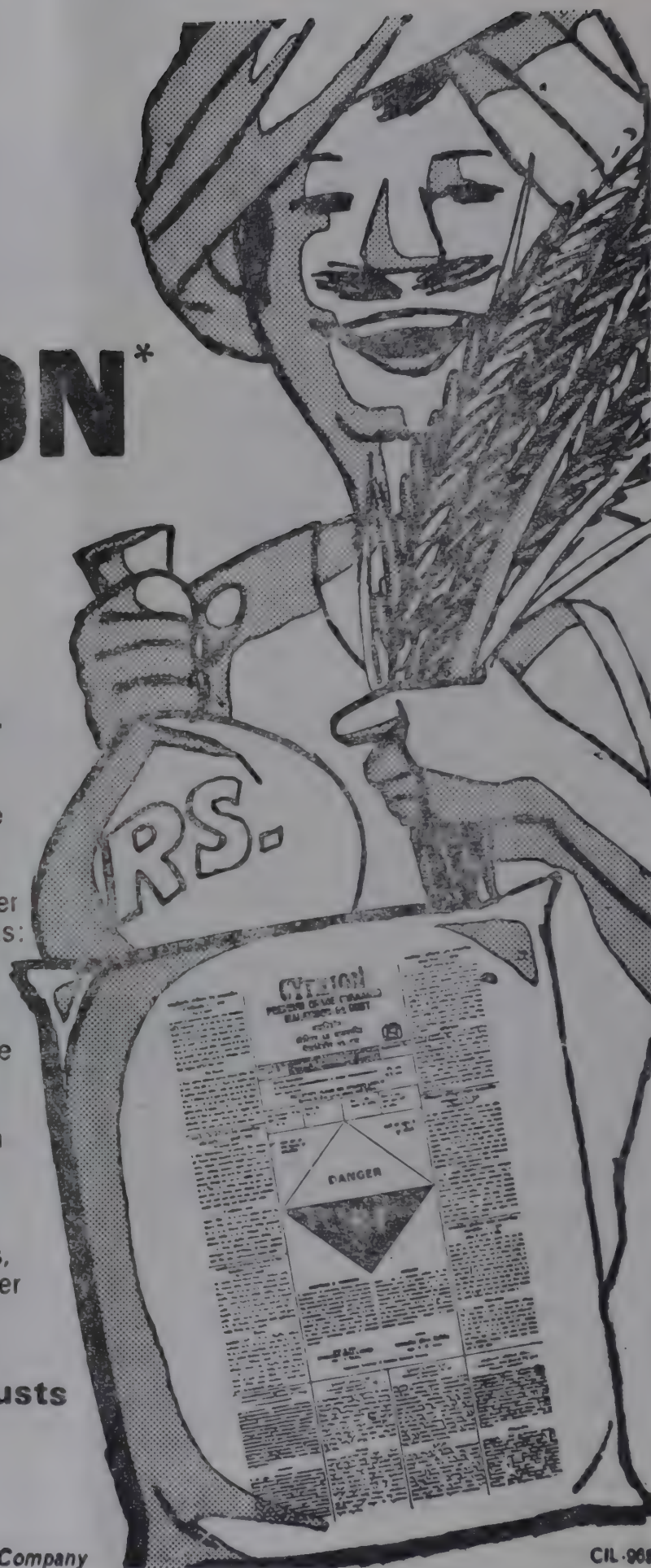
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The annual average temperature should be 26°C - 32°C (80° F - 90° F) without much diurnal fluctuation and seasonal variations. Cocoa cannot be grown commercially where the temperature falls below 10°C (50° F).

Cocoa thrives best under moist humid conditions. Atmospheric humidity at all stages of growth therefore, should be at least 75-80%. A high level of humidity is particularly important during flowering as it favours pollination.

SOIL

The best soil for Cocoa is deep well drained clayey loam rich in organic matter. Sandy, lateritic and shallow soils with slab rock underneath are unsuitable. The pH of the soil could range from 4.5-6.5.

RAINFALL

Cocoa grows under a wide range of rainfall from 50" - 150" but the total amount is less important than its distribution. It is not advisable to grow Cocoa in areas where the dry spell exceeds 3 - 4 months.

WIND

Frequent winds are harmful as this decreases humidity.

SHADE

Cocoa is a shade loving plant. At the time of planting, the shade intensity should be about 40%-50% which should be reduced as the plant grows. A relatively thin shade of about 25% will be quite sufficient after 3 years and dense shade at this stage will definitely reduce the yield.

Optimum shade is provided by the mature coconuts spaced at 25 - 30 ft, and arecanuts at 10 - 12 ft. spacing. When the shade is found to be insufficient in the initial years plantains can be planted as a temporary shade.

Though Cocoa can be cultivated as a rainfed crop under South Indian conditions, irrigated farms will yield 30 - 35% more crop. Irrigation is more important in the initial 2 years when the vegetative growth is faster. The more quickly a Cocoa tree grows in its early years, the greater its ultimate yield and there is the further advantage that it will come into bearing earlier. Under irrigated conditions with extra care and maintenance regular harvesting can be started from the 18th month of planting.

CULTIVATION

The scope for cultivation of Cocoa in Kerala is mainly as an intercrop in coconut and arecanut gardens. It can be cultivated in thinned jungle and in abandoned rubber land after reducing the population of rubber to 35 - 40 nos. per acre.

The optimum spacing for Cocoa is 10' x 10'. If coconuts are spaced at 30' x 30', 2 rows of Cocoa at 10' x 10' spacing could be accommodated between 2 rows of coconuts, whereas only one row of cocoa at 10' spacing can be planted when the coconuts are spaced at 25' x 25'. See that the Cocoa is 9 - 10' away from the coconut. The pit size should be 2' x 2' x 2'. Putting cattle manure in the pits while filling, as a basal dressing, has been found to be very effective for the young plants.

Seedlings raised in polythene bags alone may be used for planting. The practice of planting the seeds in situ and planting the uprooted seedlings as in the case of rubber should be totally avoided.

Select an open area for raising a nursery and provide shade pandals with unwoven coconut fronds at 6 - 7 ft. height. The polythene bag should have a size of 10" x 6" with holes at the bottom for drainage. The bags should be filled with a mixture of sieved top soil and dried cattle manure and then arranged in beds of convenient size. The seeds may be sown on the same day of opening the pods since it loses viability quickly. No seed treatment is necessary before sowing. Select only bold seeds. Lay the seed flat just beneath the surface of the soil in the pots about $\frac{1}{4}$ " to $\frac{1}{2}$ " deep. This will avoid the development of a twisted plant which can arise from planting the seed with the germ downwards.

Germination starts within 7 - 8 days. If the seeds are taken from fresh pods and sown immediately after opening, the germination will be about 90 - 95%. The practice of raising seedlings in a seed bed and later transplanting to a bag in the nursery is unnecessary as it frequently leads to a damaged or bent tap root.

Watering may be done daily. Avoid over-watering. If the pot mixture is good there is no need for manuring in the nursery. Thin out the shade as the seedlings grow and when the rainy season starts the whole shade can be removed to harden the seedlings.

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Leaf-eating caterpillars and white mealy-bugs are the common pests found in the nursery which can be very easily controlled by spraying one of the insecticides like Ekalux, Anthio, Lebacid etc. at monthly intervals.

The seedlings should be at least $1\frac{1}{2}$ ft. tall within 4-5 months which is the best age for planting. Vigorous plants kept beyond six months in the nursery will definitely have a set back at planting.

Cocoa grows in a series of storeys. This peculiar way of branching is called jorgnetting and the branches are called fan branches. It is better to confine the growth of the tree to one storey provided it forms at a height of about 5-6 ft. Under good care and maintenance the seedlings planted will grow about 5-6 ft. high within 6 months and form the jorgnette. Water shoots called Chupons arising on the main trunk below the jorgnette may be removed regularly to confine the height of the tree at this level.

Cocoa responds very quickly to manuring if the shade is not too much. Annually 2-3 doses of chemical fertilizers and one dose of organic manure may be applied for better growth and yield performance.

The growth of the tree is so quick that under irrigated conditions with extra care and maintenance, it starts yielding after $1\frac{1}{2}$ years of planting. Under average maintenance the yield can be expected at $2\frac{1}{2}$ -3 years only. The rainfed crop flowers during April-May on receipt of premonsoon showers and then during October-November after the North East Monsoon.

Harvest of pods from the second round flowering will be negligible, since summer follows the flowering. But there can be round the year harvest at 7-10 days intervals from a block of irrigated Cocoa with two main harvests during May-June and October-November. However the peak harvesting in general, under Kerala conditions will be during October-December. It takes about 6 months from flowering to harvest which is guided by the appearance of yellow colouration on the pods. Harvesting is done with a sharp knife retaining a portion of the stalk on the tree.

The common pests found on Cocoa are stem borer, mealy-bugs, *Helopettis* Sp; leaf-eating caterpillars and beetles and rats and squirrels. Rats and Squirrels appear to be a major menace in some parts while the other pests can be very effectively controlled by timely spraying any of the common insecticides.

Poison baiting and trapping are the only control measures for rats and squirrels. In addition the pods should be harvested as soon as they are ripe.

Though there are many fungal diseases on Cocoa, the only disease worth to be noted in Kerala is pink disease caused by *Corticium salmenicola*, characterised by the presence of a pinkish powdery coating on the affected parts resulting in the yellowing and shedding of leaves and finally drying up of branches. It is checked by pruning the affected branches and swabbing the cut ends with Bordeaux paste. The disease can be prevented by spraying 1% Bordeaux mixture during April-May and in the break between the monsoons.

The growth mechanism of Cocoa are such that many more pods are pollinated than the tree can bring to maturity and so a number of small pods or Cherelles are likely to dry out. This is generally misinterpreted as a disease by most of the growers. It is called "Cherelle wilt" and is a natural process, not a disease.

FERMENTATION AND DRYING

The pods are usually opened soon after harvesting but when necessary can be kept for 5-6 days without harm. The pods are opened by banging on the stone and the beans are scooped out. Each pod will have on an average 40 beans. They should not be washed or treated in any way before fermentation. The beans are fermented in order to reduce their bitter taste, develop the aroma, kill the germ of the seed, remove the pulp covering the seed and to loosen the testa to render the kernels friable. The beans are most successfully fermented in wooden fermentation trays of size $2\frac{1}{2}' \times 1\frac{1}{2}' \times 5'$ with sufficient holes at the bottom to allow the sweating from the pulp to drain off. One tray will hold about 40 kgs. of wet beans. The trays are filled with the wet beans and at least 4 trays of beans kept one above the other are needed for successful fermentation. The beans on the top most tray is covered with a plantain leaf and on the next day, the entire stack is covered with a gunny sack to keep the beans warm. Leave the beans as it is to ferment for a total of 5 days. Take out the beans on completion of 5 days and spread out in bamboo mats for sun drying. Do not wash the fermented beans before drying.

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The beans must be dried for 5-6 days untill the shell crackle when rubbed between the hands. See that the dried beans are packed only in polythene lined gunny bags since the beans are highly hygroscopic. About 25-28 pods will give 1 kg. of dry beans.

Sun drying is almost impossible under South Indian climatic conditions. Since the major harvest season spreads out from June to November. Hence, drying is mainly done using Cocoa driers. It will not be economically feasi-

ble for a small grower to make a drier. As explained earlier small quantities of beans cannot be fermented also. Hence, for the small growers it is always advisable to market the beans as wet beans immediately after opening the pods

ECONOMICS OF CULTIVATION

Under average maintenance Cocoa yields on the 3rd year of planting and an economical yield can be expected from the 5th year

onwards. The maximum yield is obtained by the 10th year which remains steady for another 10 years. The economical life span of Cocoa is about 30-35 years.

An average yield of 300 to 500 kgs. of dry beans can be expected per acre from the 5th year onwards, when planted as an inter-crop, depending upon the degree of care and attention. The present market price of properly fermented dry beans is Rs. 40/- per kg



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226 Hects.

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Pasuparai P. O.
Elappara

- Area under Cardamom

82 Hects.

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- Area under Cardamom

292 Hects.

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Chulika Estate
Meppadi P. O.
Kozhikode Dist

- Area under Cardamom

206 Hects.

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2. Yassain Tabba' and Sons Co. P. o. Box. 143.
Amman/Jordan.
3. Commercial Co. Ltd. P. o Box: 1255, Amman/
Jordan.
4. Nour Iddin El Masri and Zahi Darwazeh Co.
P.O. Box. 1467, Amman/Jordan.
5. Moh'D N. Malas P. O. Box. 105 Amman/Jordan
- 6 Mithkal Shawkat and Sami Asfour Co.,
P. O.Box 6. Amman, Jordan.
7. Abdul Rahman Abu Hassan P, O Box. 207,
Amman/Jordan.
8. Palestinian Trading Co , P. O Box. 10171.
Amman/Jordan.
9. Naim Kal'Aji P. O. Box. 295, Amman/Jordan
10. Spinnery'S Co. 1948 Ltd P. O Box. 40. Amm-
an/Jordan
11. General Trading Co. P.O. Box. 1855. Amman/-
Jordan.
12. Afif Mango Trading Co. P.O. Box. 424, Amman/
Jordan
13. Khador A. A. O Shaheen Ras El Ein Str. Amman/
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14. Sabe' Aloush and Sons Co. P. O. Box. 1766,
Amman/Jordan
- 15 Wahbeh Tamari and Sons Co. P. O. Box. 355,
Amman/Jordan.
16. Jawdat Bitar and Co. P. O. Box. 170, Amman/
Jordan.
17. Jordanian Food products Co P. O. Box. 1985,
Amman/Jordan.
- 18 Radi H Yaish Tel : 23081 Amman/Jordan.
- 19 Elias Banayout Hosh and Sons Co. Tel: 56338,
Amman/Jordan.
20. International and Supply Co P. O. Box. 1746,
Amman/Jordan.
- 21 Rashid Darwazeh and Sons Co. P. O. Box. 195
Amman/Jordan
22. Moh'D Ali And Radi' Darwazeh P. O. Box. 36,
Amman/Jordan.
23. Sa' Ad M. Eddin P. O. Box 628, Amman/Jordan
24. Sudki and Zuhdi Al Saifee P. O Box: 1439,
Amman/Jordan.
25. Jordan Sales Co P O. Box 8628, Amman/-
Jordan.
26. Ja'Ouni Trading Establishment P. O. Box: 2916,
Amman/Jordan

INDIAN MARKET PRICES

Centre / Variety	Prices Rs/kg. During	
	March 1978	April 1978

Bodinayakanur

Extra Bold)		
Bold)		
Superior Bulk)		
Bulk Grade I)	NT	NT
Bulk Grade II)		
Shipment)		

Virudhunagar

Bold	193.00	195.00
Bulk	134.00	140.25
Shipment	96.00	100.00
Seed	100.00	100.00

Sirsi	69.55—116.40	66.45—124.55
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Saklespur

Inferior	95.00—105.00	95.00—115.00
Middle	100.00—115.00	108.00—122.00
Rasi	108.00—120.00	115.00—128.00
Best Rasi	115.00—125.00	120.00—135.00
Jaradi	122.00—135.00	130.00—145.00
Selected	145.00—155.00	145.00—155.00

Mercara

Coorg Green		
Extra Bold	115.00—150.00	148.00—155.00
Coorg Green		
Bold	110.00—140.00	130.00—143.00
Coorg Green	110.00—130.00	110.00—120.00
Coorg FAQ	80.00—110.00	95.00—105.00

Bombay

White	110.00—140.00	110.00—140.00
Soneri	115.00—130.00	120.00—130.00

Note: NT = No transaction

SALES AND PRICES AT

MARCH 1978

MARCH 1977

Centre	Date of auction	Sales (kgs.)	Rate (Rs./kg.)			Date of auction	Sales (kgs.)	Rate (Rs./kg.)		
			Maxi-mum	Mini-mum	average			Maxi-mum	Mini-mum	average
Vandanmettu	4-3-1978	34404	177.90	77.10	140.15	—	—	—	—	—
	7-3-1978	35068	196.30	50.00	134.02	—	—	—	—	—
	11-3-1978	44449	177.10	83.90	140.77	—	—	—	—	—
	14-3-1978	7832	168.10	73.10	142.05	—	—	—	—	—
	18-3-1978	37381	196.90	60.00	154.40	—	—	—	—	—
	21-3-1978	12624	194.90	85.00	145.59	—	—	—	—	—
	25-3-1978	39738	207.00	72.00	154.59	—	—	—	—	—
	28-3-1978	13123	186.00	56.10	146.31	—	—	—	—	—
Udumbanchola	—	—	—	—	—	—	—	—	—	—
Santhanpara	2-3-1978	310	126.10	70.10	98.36	2-3-1977	185	159.50	50.00	145.32
	16-3-1978	1415	148.00	66.00	122.14	7-3-1977	695	163.20	144.10	153.88
	27-3-1978	1720	165.20	58.00	140.09	14-3-1977	893	150.00	46.80	138.60
	30-3-1978	2247	154.00	56.00	132.36	28-3-1977	3553	151.80	39.80	135.90
Kallar	—	—	—	—	—	30-3-1977	4750	165.80	41.00	137.45
Cochin	—	—	—	—	—	—	—	—	—	—
Pattiveeranpatty	5-3-1978	3290	194.00	85.00	113.84	6-3-1977	4598	216.90	71.00	157.42
	12-3-1978	3845	150.10	85.00	110.09	13-3-1977	1690	215.90	110.00	144.56
	19-3-1978	2524	150.00	50.00	116.30	20-3-1977	4296	175.00	131.00	150.45
	26-3-1978	2456	147.20	98.10	126.78	27-3-1977	2214	200.00	129.00	148.44
Mangalore	8-3-1978	4539	143.00	79.50	115.00	10-3-1977	84	149.00	137.00	143.74
	15-3-1978	8937	141.50	90.00	120.00	—	—	—	—	—
Sirsi	22-3-1978	292	109.16	58.80	105.61	—	—	—	—	—
Mercara	3-3-1978	791	120.00	50.00	100.60	—	—	—	—	—
	31-3-1978	589	150.00	80.00	120.00	—	—	—	—	—
Saklespur	1-3-1978	672	149.10	92.30	109.13	1-3-1977	6281	193.00	72.00	148.32
	1-3-1978	169	149.10	100.00	123.94	1-3-1977	750	164.00	137.00	145.20
	4-3-1978	1196	158.50	92.10	119.31	9-3-1977	1337	195.00	133.70	150.60
	8-3-1978	1193	159.00	96.50	115.15	9-3-1977	1412	190.00	115.00	142.90
	14-3-1978	6200	156.00	78.00	113.97	10-3-1977	2116	194.30	90.00	150.74
	22-3-1978	1005	126.60	75.00	115.36	22-3-1977	327	158.00	130.00	140.23
	28-3-1978	6980	156.00	66.00	116.85	22-3-1977	1288	178.10	116.20	141.07
	29-3-1978	1628	125.60	61.00	114.53	23-3-1977	465	168.00	123.00	138.70
						26-3-1977	794	185.00	126.00	148.82
						29-3-1977	4628	185.00	100.00	145.44
						29-3-1977	488	178.10	133.10	143.12

CARDAMOM AUCTIONS

APRIL 1978

APRIL 1977

Centre	Date of auction	Sales (kgs.)	Rate (Rs./kg.)			Date of auction	Sales (kgs.)	Rate (Rs./kg.)		
			Maxi-mum	Mini-mum	average			Maxi-mum	Mini-mum	average
Vandanmettu	18-4-1978	5780	181.10	93.00	153.37	30-4-1977	8852	171.00	82.00	124.01
	22-4-1978	21294	186.00	70.10	149.02	—	—	—	—	—
Udumbanchola	—	—	—	—	—	—	—	—	—	—
Santhanpara	6-4-1978	1160	149.60	49.00	132.01	—	—	—	—	—
	20-4-1978	525	130.00	100.00	124.64	—	—	—	—	—
Kallar	—	—	—	—	—	—	—	—	—	—
Cochin	10-4-1978	1790	160.00	79.00	125.28	11-4-1977	548	180.50	113.00	145.68
	—	—	—	—	—	25-4-1977	121	151.00	105.00	113.24
Pattiveeranpatty	2-4-1978	4714	175.00	105.10	127.55	6-4-1977	4340	211.70	75.00	132.42
	9-4-1978	2085	180.10	60.00	128.15	10-4-1977	2601	177.00	71.10	116.47
	16-4-1978	3444	175.50	88.00	134.55	17-4-1977	2913	201.10	71.10	126.80
	23-4-1978	1897	177.00	110.00	141.39	24-4-1977	2631	132.30	61.10	104.23
	30-4-1978	1700	170.00	90.00	131.28	29-4-1977	2408	181.00	41.10	116.67
	—	—	—	—	—	—	—	—	—	—
Mangalore	5-4-1978	4802	145.50	100.00	120.00	—	—	—	—	—
	26-4-1978	3189	160.00	87.00	125.00	—	—	—	—	—
Mercara	—	—	—	—	—	—	—	—	—	—
Sirsi	—	—	—	—	—	—	—	—	—	—
Saklespur	12-4-1978	2336	155.00	67.50	116.86	5-4-1977	2893	188.10	124.30	137.81
	18-4-1978	8635	155.10	85.60	126.61	5-4-1977	549	180.00	132.90	134.15
	19-4-1978	603	135.00	95.00	122.20	6-4-1977	782	178.00	130.00	143.84
	26-4-1978	88	129.00	123.90	126.40	7-4-1977	893	185.00	120.00	143.30
	28-4-1978	997	143.50	110.50	130.07	9-4-1977	934	191.00	128.50	143.17
	29-4-1978	1983	155.30	34.00	125.92	13-4-1977	597	174.10	120.00	143.60
	—	—	—	—	—	14-4-1977	4041	180.00	129.10	130.61
	—	—	—	—	—	16-4-1977	947	178.10	129.10	143.66
	—	—	—	—	—	19-4-1977	884	172.10	115.00	131.11
	—	—	—	—	—	19-1-1977	206	172.70	130.00	134.20
	—	—	—	—	—	20-4-1977	494	174.00	84.10	136.64
	—	—	—	—	—	27-4-1977	755	180.00	83.50	130.42
	—	—	—	—	—	27-4-1977	745	171.00	115.10	134.06
	—	—	—	—	—	28-4-1977	3618	180.00	111.00	131.44
	—	—	—	—	—	29-4-1977	829	168.90	120.00	135.15
	—	—	—	—	—	29-4-1977	5104	175.00	50.00	131.81
	—	—	—	—	—	—	—	—	—	—
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Sales and Prices at Cardamom Auctions

MAY 1978

MAY 1977

Centre	Date	Sales (kgs.)	Rate		Rs. / kg.	Date	Sales (kgs.)	Rate		Rs. / kg.
			Max	Min.	Av.			Max.	Min.	Av.
Andanmettu	—	—	—	—	—	14.5.1977	20114	194.90	50.00	116.29
	—	—	—	—	—	28.5.1977	21355	169.20	56.00	117.25
dumbanchola	—	—	—	—	—	—	—	—	—	—
anthanpara	—	—	—	—	—	—	—	—	—	—
allar	—	—	—	—	—	—	—	—	—	—
ochin	—	—	—	—	—	—	—	—	—	—
attiveeranpatty	7.5.1978	3199	175.00	71.00	117.49	8.5.1977	3716	180.00	55.60	112.53
	14.5.1978	3844	183.50	105.00	129.97	15.5.1977	1629	176.20	50.00	119.89
	21.5.1978	1865	158.00	70.00	119.20	22.5.1977	2494	158.10	67.10	102.10
	28.5.1978	2748	170.90	60.00	129.32	29.5.1977	3469	140.10	40.00	87.51
Mangalore	1.5.1978	68	120.00	40.00	109.00	—	—	—	—	—
	12.5.1978	200	132.00	132.00	132.00	—	—	—	—	—
Mercara	5.5.1978	267	137.00	108.00	128.00	—	—	—	—	—
	26.5.1978	400	131.00	131.00	131.00	—	—	—	—	—
Mirsi	10.5.1978	780	127.25	25.50	119.74	—	—	—	—	—
	31.5.1978	257	130.88	21.69	119.00	—	—	—	—	—
Maklespur	5.5.1978	969	157.00	98.00	130.35	4.5.1977	861	181.00	108.50	139.60
	7.5.1978	2627	151.00	90.00	131.74	10.5.1977	512	178.40	120.50	148.41
	13.5.1978	1578	160.30	123.00	132.60	10.5.1977	850	147.00	120.10	138.15
	15.5.1978	558	145.00	77.00	122.69	11.5.1977	851	185.10	101.10	142.78
	18.5.1978	2149	131.00	118.00	125.37	14.5.1977	404	141.50	127.00	137.39
	23.5.1978	1200	137.00	119.00	130.58	17.5.1977	688	180.00	124.50	136.20
	24.5.1978	522	165.00	125.80	136.15	17.5.1977	2495	195.00	80.00	134.33
	27.5.1978	638	148.00	134.00	134.73	18.5.1977	200	144.20	126.50	139.12
						19.5.1977	1428	179.00	101.10	135.01
						24.5.1977	97	175.60	134.00	135.12
						25.5.1977	494	179.40	11.10	123.43
						25.5.1977	109	183.00	128.10	140.71
						28.5.1977	52	167.50	121.50	145.98

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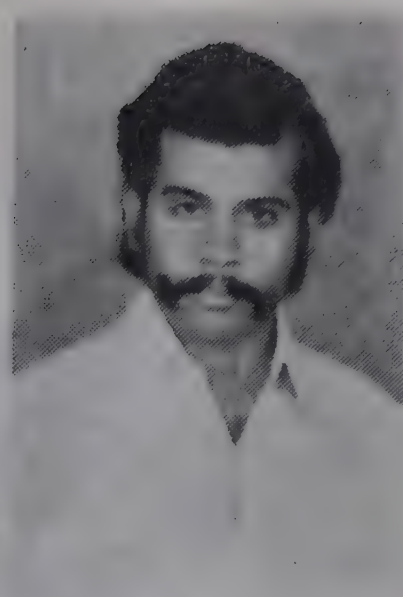
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NEMATODE MALADY IN CARDAMOM

D. KUMARESAN*



Elite spice, Cardamom, popularly known as "Queen of Spices" ranks second among the dollar earning spice crops in India. The vast changes in ecology of the cardamom growing tracts resulting in the long dry spells threaten the productivity of the plantations, which ultimately change the pest activity also. At present, pest problem is considered one of the major constraints for the production of cardamom. Among the non-insect pest problems recorded in cardamom, nematode problem is a serious one in seedlings production.

Phytonematodes are those seen associated with plants and constitute one of the most important groups which live in soil around the roots of the plants. They are very small, about 0.01 to 1.00mm in length. Generally, nematodes have six stages viz., egg, four kinds of larvae and adult. The larva undergoes first moulting inside the egg itself and the second stage larva comes out to undergo three more moults before becoming the adult. The average number of eggs laid by a female is about 200 to 500. The life cycle is completed in 20 to 40 days in many cases.

A number of different kinds of plant parasitic nematodes are known to science, but all of them

are not pathogenic to crops. In cardamom the root-knot nematode (*Meloidogyne* sp.) reniform nematode (*Rotylenchulus reniformis*) lesion nematode (*Pratylenchus* Sp.) and *Rodapholus similis*, have been recorded as pathogenic in cardamom seedlings. The root-knot nematode is found in large numbers compared to other genera of nematode.

SYMPTOM

As the nematode species parasitise the root portion, the symptoms are manifested in the aerial portion only when the nematode population reaches marginal threshold level or above. Heavy root infection shows patchy growth of plants with yellowing, stunting of shoot and reduced size of various shoot parts. In general, plant nutrient deficiency symptoms may be observed in the initial stage, seldom followed by death unless the soil population of the nematode are too high when crop growth may be severely reduced. The underground symptoms can be seen after uprooting the infected plants. Small galls (root-knot) are seen on the roots in the case of root-knot nematode attack with minute brownish egg masses attached to these. Restricted root growth is also seen in severe case.

CONTROL

The basic principle in control of nematodes is prevention of nematodes feeding on plants. Control of plant parasitic nematodes, though difficult, is essential for obtaining healthy seedlings and high yields. Once nematodes establish in the soil, eradication is impracticable.

1. Selection of root-knot free land for nursery. Soils from selected land may be examined for nematodes before sowing of cardamom seeds.

2. As a precautionary measure the seed beds may be treated with nematicides. Fumigation with DBCP 60 EC @ 50 lit/ha. or metham sodium @ 250 lit./ha. 2 to 3 weeks before sowing or transplanting is essential.

3. Farm yard manure or compost or organic manures which are to be applied in the nursery should be treated with nematicides before application as they may carry harmful nematodes.

4. Addition of organic manures such as neem-cake can also reduce the nematode population due to the presence of substances toxic to them.

5. Application of Temik 10 G @ 10 Kg. a. i./ha or 55 grams per nursery bed of size 20' x 3' is recommended to prevent the multiplication of nematode population.

*Field Officer, Cardamom Board, Udumbanchola.



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Production & Exports

PRODUCTION :

The revised estimate of production of Cardamom for 1977-78 season is placed at 3800 M.T. with State-wise break up as follows:

State	Production (M. T)
Kerala	2800
Tamilnadu	300
Karnataka	700
TOTAL:	3800

SALES & WEIGHTED AVERAGE PRICES AT AUCTIONS :

State-wise, Centre-wise auction sales and average prices of cardamom during 1977-78 crop season compared to 1976-77 crop season are given below: The figures relate to the period Augst 1977 to May 1978.

Auctions during 1977-78 crop season has come to an end in all auction centres in Kerala by the end of April 1978. The total sales through auctions during 1977-78 (August - May) was 2938 M. T. against 1243 M. T. sold during the same period of 1976-77. Production during 1976-77 was only 2400 M. T. on account of severe drought conditions in the producing areas while a good crop of 3800 M. T. is estimated for 1977-78. Moreover, last year there was no regular auction after 12th January consequent on the initial imposition of export duty at the high rate of Rs. 50/- per kg. on 12-1-1977. It could be seen that the maximum quantity sold through auctions in Kerala State in the past years

was only 2114 M. T. recorded during 1971-72 when the production was 3785 M. T. But during 1977-78 with almost same level of production, the sales through auctions in Kerala have gone up to 2300 M.T. More sales through auctions mean better price to the planters and this could be achieved by disseminating current and upto date information on prices to the planters and traders through Board's weekly bulletin 'Cardamom Auction Prices'

Out of the total auction sales of 2938 M. T., 2300 M. T. were sold in Kerala constituting 78% of which 1839 M. T. were sold at Vandanmettu alone accounting for 63% cardamom sold at Vandanmettu/Kerala auction are mainly for exports and hence, month-wise weighted average prices prevailed at Vandanmettu auctions during 1977-78 season are given below:

State/Centre	1977-78		1976-77	
	Quantity (M.T.) (August-May)	Average price (Rs./kg.)	Quantity (M.T.) (August-May)	Average price (Rs./kg.)

KERALA:

Vandanmettu	1839	146.21	613	167.41
Santhanpara	198	126.82	99	156.16
Udumbanchola	115	137.23	10	159.50
Kallar	117	120.66	52	150.97
Cochin	31	128.35	11	172.60
Total :	2300	142.55	785	164.88

TAMILNADU:

Pattiveeranpatti	149	116.48	104	146.58
------------------	-----	--------	-----	--------

KARNATAKA:

Saklespur	413	104.64	298	149.58
Mercara	27	103.15	49	147.90
Mangalore	45	118.25	3	147.10
Sirsi	4	104.39	4	147.60
Total:	489	108.31	354	147.33
GRAND TOTAL:	2938	135.53	1243	158.35

MONTH	Weighted Average prices at Vandanmettu (Rs./kg.)	
August 1977	137.14	
September 1977	131.11	
October 1977	143.08	
November 1977	151.17	
December 1977	161.53	
January 1978	148.72	
February 1978	133.81	
March 1978	144.96	
April 1978	149.95	

It could be observed from the above figures that the average prices remained at the higher levels during October-January period when maximum quantities were sold. Though a marginal decline of about Rs. 15/- per kg. in the average price was noticed in February, it was only a temporary fall for want of buying support from the exporters. The prices in March and April have gone up. The average price at the latest auction at Vandanmettu on 22-4-1978 was Rs. 149/- per kg.

EXPORT

Month-wise export performance of cardamom during the financial year 1977-78, with comparative figures for the previous years is given below:

MONTHS	Quantity (kgs.)	1977 - 78		1976 - 77		
		Value (Rs.)	Unit value (Rs./kg.)	Quantity (kgs.)	Value (Rs.)	Unit value (Rs./kg.)
April	104273	20667368	198.40	151719	17096017	112.68
May	199617	37229211	186.50	65956	7156111	108.50
June	159114	28157433	176.96	65825	7167177	108.88
July	75672	12780100	168.89	39506	4524942	114.54
August	89619	15791060	176.20	18732	2527848	134.95
September	87012	14120046	162.28	18945	2562845	135.28
October	386127	63664637	164.88	13697	1668165	121.79
November	415918	70540758	169.60	55945	8136804	145.44
December	544341	97538366	179.20	131773	24276710	184.23
January	261347	47317537	181.05	138575	28095687	202.75
February	207548	36012036	173.51	—	—	—
March	201715	34993002	173.48	192065	37101579	193.17
TOTAL:	2732303	478811555	175.24	892738	140313885	157.17

Source: Monthly Returns from exporters of cardamom.

The year 1977-78 registered a new record in the history of cardamom industry by the remarkable performance in exports in terms of quantity, price as well as earnings. The export earnings during 1977-78 touched the

peak level of about 48 crores as per figures compiled from the monthly returns from exporters of cardamom. The annual earnings from cardamom in the past never

exceeded Rs. 20 crores. Similarly, the quantity exported during 1977-78 totalled to 2732 M. T. against the previous peak of 2147 M. T. achieved during 1971-72. The average export price realised during 1977-78 also rose to the

record level of Rs. 175/- per kg. from Rs. 157/- per kg. realised during 1976-77. The total earnings from cardamom including cardamom oil, cardamom extract, flavour and cardamom husks totalled to about Rs 49/ crores during 1977-78.

The table right above shows the trend in export, earnings and prices during the past years:

It could be seen from the above data that maximum export during the past was only 2147 M. T. exported during 1971-72. Export during 1977-78 has gone up by about 600 M. T. more than the previous peak. The annual average export during the past 13 years was only 1510 M. T. and the average for latest 5 years worked out to only 1530 M. T. It is also seen that the export during 1977-78 is more than the annual average production of about 2650 M. T. during the last 13 years and is more or less equal to the average production during the recent 5 years.

The annual export earnings from cardamom during the past never exceeded Rs. 19.38 crores achieved during 1975-76. Prior to 1975-76 the export earnings ranged between Rs. 3 crores to Rs. 13 crores only. But 1977-78 performance registered a quantum jump of about two and a half times more than the previous record without touching the twenties and thirties'. It is also seen that the earnings during 1977-78 was more than the previous three years annual earnings combined together. This remarkable achievement could be brought out only because of correct thinking and planned activities to obtain maximum results

A comparative analysis of the rate of growth of export earnings from cardamom and some other export commodities like Pepper, Cashew Kernels, Coir Products and Marine products is made by calculating the indices for the period 1971-72 to 1977-78. The indices of earnings of these commodities are given below:

The average export price realised during 1977-78 also marked a new record touching Rs. 175/- per kg. The previous peak realisation was Rs. 157/- per kg. during 1976-77. A steep rise in the price is noticed during 1976-77 when it rose to Rs. 157/- per kg. from Rs. 100/- per kg. during 1975-76. This was mainly on account of the shrinkage of production to 2400 M. T. during 1976-77. In contrast to the usual phenomenon of higher production followed by a severe fall in price as happened in the years 1970-71 and 1971-72, we could maintain the prices at the higher levels inspite of a very good crop of 3800 M. T. during 1977-78. Dissemination of current information on prices, sales, exports etc. to the planters and traders through Board's publications especially the weekly bulletin on Cardamom Auction Prices helped a lot to maintain the price line up.

The original target of export fixed by the Government for 1977-78

we have exceeded this revised target by exporting 2732 M. T. with an earning of Rs. 47.88 crores during 1977-78

MARKET-WISE ANALYSIS:

90% of the total exports during 1977-78 was directed to the Middle East Markets alone. Out of the total export of 2732 M. T. valued at Rs. 47.88 crores, 2462 M. T. valued at Rs. 44.24 crores were exported to the Middle East countries. In the Middle East Zone, Kuwait alone imported 1221 M. T. valued at Rs. 21.64 crores comprising 45% of the total exports, while the maximum export to Kuwait during the past was only 690 M. T. valued at Rs. 7.31 crores realised during 1975-76. It is worth mentioning in this context that the earnings from Kuwait alone during 1977-78 exceeded the previous annual record earnings of Rs. 19.38 crores achieved during 1975-76. Saudi Arabia took 771 M. T. worth Rs. 14.35 crores accounting for 28% of the total exports. It is pertinent to note that the earnings from Saudi Arabia has exceeded the total earnings of Rs. 14.03 crores achieved during the year 1976-77. The annual average price realised from Kuwait during the year was Rs. 177/- per kg. and that from Saudi Arabia was Rs. 186/- per kg. India's total exports and the share of Middle East Markets during the last 5 years are given in next page.

Another fact to be noted is that the secondary Arabian Markets like Jordan, Lebanon, Syria etc. have also started to import sizeable quantities of cardamom from India during 1977-78. Jordan which imported only negligible or nil quantities from India during the past took 39 M. T. valued

Year (April-March)	INDICES OF EXPORT EARNINGS (Base Year 1971-72)				
	Cardamom	Pepper	Cashew Kernels	Marine products	Coir Products
1971-72	100	100	100	100	100
1972-73	85	97	112	134	100
1973-74	144	199	121	201	105
1974-75	166	233	193	154	118
1975-76	241	229	157	280	130
1976-77	175	258	173	425	153
1977-78	596	338	241	406	161

It could be observed from the above table that the earnings from cardamom exports during 1977-78 has gone up by nearly 6 times from the level of 1971-72 while other products have not recorded such a spectacular rate of growth.

was 1900 M. T. valued at Rs. 28.00 crores. Considering an increase in production from 3500 M. T. to 3800 M. T. the export target was subsequently revised by the Board as 2300 M. T. valued at Rs. 35.00 crores. It will be worth mentioning in this context, that

YEAR	Total Export		Export to Middle East			
	Quantity (M.T.)	Value (Rs. Crores)	Quantity (M.T.)	% Share	Value (Rs. Crores)	% Share
1973-74	1813	11.55	1525	84	10.14	88
1974-75	1626	13.32	1022	63	9.08	68
1975-76	1941	19.38	1607	83	16.76	86
1976-77	893	14.03	602	67	9.81	70
1977-78	2732	47.88	2462	90	44.24	92

at Rs 71 lakhs at an average price of Rs. 182/- per kg. during 1977-78.

Jordan in the East Asia Zone imported 87 M. T. valued at Rs. 1.17 crores at an average price of Rs. 136/- per kg. constituting 3% of the total exports. In the East European Zone, G.D.R. took 50 M.T. valued at Rs. 68 lakhs at an average price of Rs. 137/- per kg U.S.S.R. which used to import about 200 M.T. (average) imported only 4 M.T. during the financial year 1977-78. This is on account of the fact that shipments which ought to have taken place during the period January March 1978 was postponed to the months of April-May 1978 which will be accounted for in the financial year 1978-79. Exports to the West European Zone which ranged from 30 to 60 M.T. in recent years rose to 74 M.T. during 1977-78 showing the signs of India recapturing her lost markets in this zone.

GRADE-WISE ANALYSIS:

The grade-wise break up of total exports during the year indicates that 39% of the total exports was bold cardamom of Alleppey Green variety (AGEB & AGB). The percentage of bold cardamom during the previous years ranged between 22% to 28% only. The superior and shipment grades constituted 54% of the total ex-

ports during 1977-78 as against 66% during the previous years. Grade wise break up figures indicating quantity, value and unit price of export of cardamom during 1977-78 is given below:

GRADE	Quantity (M.T.)	% Share	Value (Rs. '000s)	Unit value (Rs./kg.)
1. Alleppey Green:				
Bold	1056	39	201312	190.60
Superior/Shipment	1471	54	250900	170.52
Others	40	1	4098	103.56
T O T A L :	2567	94	456310	177.75
2. Coorg Green	20	1	2852	138.72
3. Bleached	116	4	15470	133.34
4. Mixed Cardamom	17	1	2967	174.51
5. Cardamom Seeds	12	@	1213	104.79
G R A N D T O T A L :	2732	100	478812	175.24

EXPORT OF CARDAMOM OIL AND OTHER CARDAMOM PRODUCTS:

Export of cardamom oil has picked up recently. During the financial year 1977-78, 477 kgs. of cardamom oil valued at Rs. 10.43 lakhs has been exported. The export price for cardamom oil ranged between Rs. 2,000/- to Rs. 2,800/- per kg U.S.A., France, G. F. R. and Switzerland are the countries importing cardamom oil from India. The yield rate of oil from cardamom seeds is reported to be around 5 per cent i.e. 20 kgs. of cardamom

seeds when converted into oil will yield 1 kg. of cardamom oil.

Apart from cardamom oil a new product viz., cardamom extract flavour worth Rs. 27,612/- was exported to Kuwait by one oil producing firm in Calcutta during the year. Cardamom spent seeds valued at Rs. 10,080 was also exported to West Germany during 1977-78. Further, a quantity of 22996 kgs. of cardamom husks valued at Rs. 239885/- were also exported during the year.

Out of the total production of 3,800 M. T. during the year 1977-78 around 1100-1200 M. T. will be for internal consumption. The balance of 2600-2700 M. T. are for export of which around 2100 M. T. valued at Rs. 36.42 crores have already been exported till 31st March 1978. The remaining quantity of 500-600 M. T. are expected to be exported during the off season period April-August 1978 which will be accounted for in the financial year 1978-79.

CURRENT EXPORTS:

Export of cardamom during the first two months of the current financial year (1978-79) with

corresponding figures for 1977-78 is given below:

It could be seen from the above statement that during the first two months of the current finan-

cial year, cardamom exports totalled to 398 M. T. with an earning of Rs. 6.79 crores as against 304 M. T. valued at Rs. 5.79 crores during the same period of the previous year. Exports during the beginning of the current financial year has thus indicated a good start registering an increase of over 30% in terms of quantity and over 17% in terms of earnings from the previous year's performance. ☐

Month	Quantity [kgs.]	Value [Rs.]	1978 - 79	Quantity	1977 - 78	Unit value [Rs /kg.]
			Unit value [Rs /kg.]		Value [Rs.]	
April	210604	35804742	170.01	104273	20667368	198.20
May	186981	32105943	171 71	199617	37229211	186.50
TOTAL:	397585	67910685	170.81	303890	57896579	190.52

Source: April 1977, May 1977 and April 1978:
Monthly returns from exporters of cardamom
May 1978: Customs Authorities.

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Telephone No. 11

Justin Leonard Coffee Curing Works

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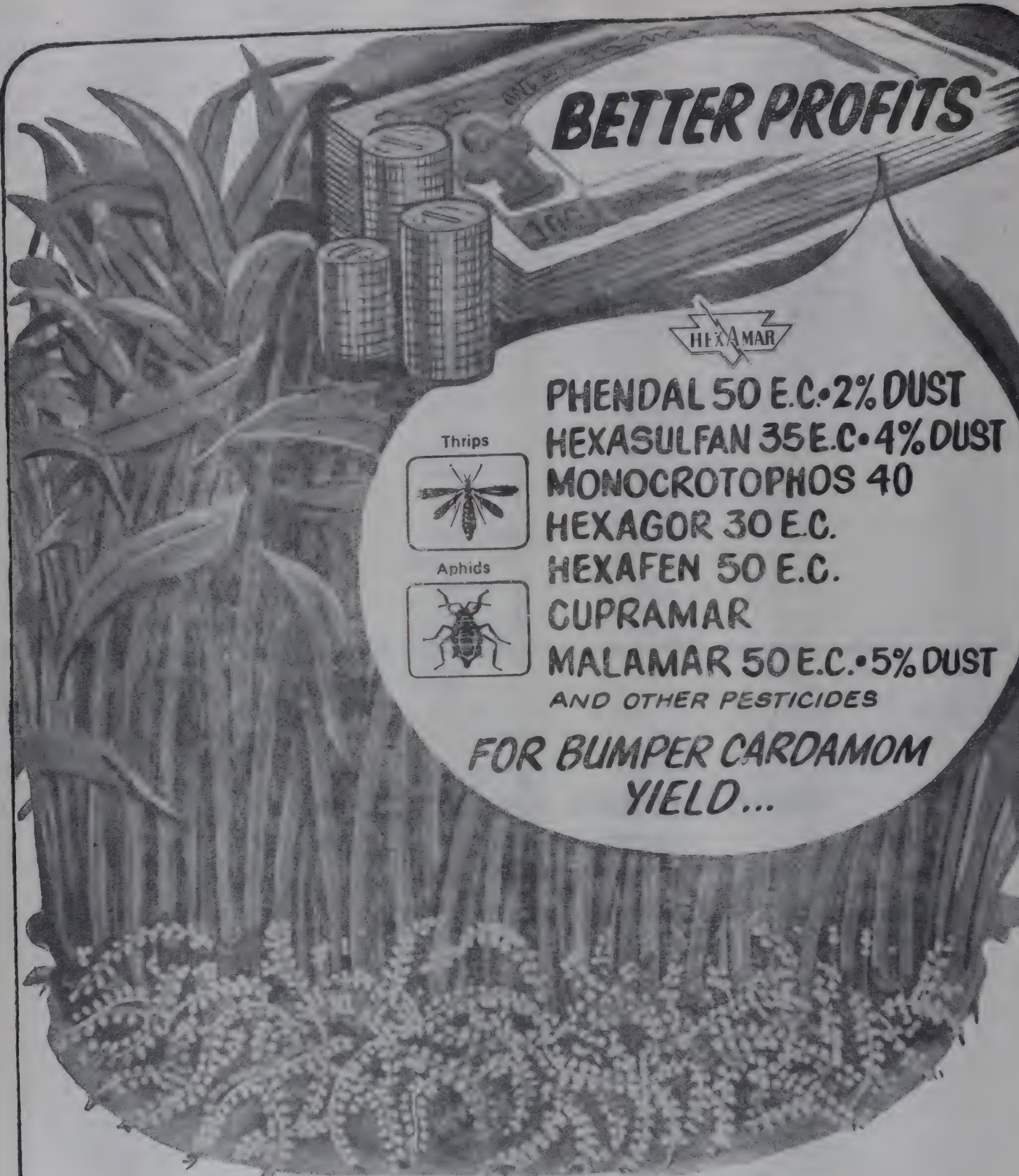
TNGST. RC No. 446462 CBL. No. 176

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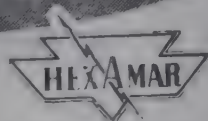
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NEWS AND NOTES



Shri S. Baskar lighting the sacred lamp.

BOARD ACQUIRES ESTATE FOR RESEARCH STATION

Cardamom Board has acquired a 104 acres cardamom estate in Idukki District of Kerala for establishing its main Research Station. This plantation known as 'Myladumpara Estate' is in Udumbanchola, on the Munnar-Kumili Road, 8Km. from Nedumkandam, the Taluk headquarters of Udumbanchola. Adaptive research trials on all aspects of cardamom cultivation would be attended to in this plantation.

The farm was taken possession of at a simple function by Shri. S. Baskar, Member, Cardamom Bo-

ard lighting the sacred lamp on 26th May 1978. In his opening remarks Shri Baskar narrated the

necessity of conducting research on cardamom for deriving better and scientific methods in all spheres of cardamom culture. He congratulated the Government of India for fulfilling the longstanding desire of the Board and the plantation community to have a Research Station in the high ranges of Kerala which is the major cardamom producing tract in the country. He also

A view of the audience on the occasion of the inauguration.



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Photo taken on the occasion of the taking possession of the farm

All India Cardamom Traders Conference

A two day conference of the cardamom traders was convened on 10th and 11th June 1978 at Bodinayakanur under the auspices of the Cardamom Traders' Chamber, Bodinayakanur. Representatives from all trading centres viz. Bodinayakanur, Virudhunagar, Cumbum, Bombay, Cochin, Delhi Kanpur, Haveri, Saklespur, Mangalore etc. and Government officials connected with tax, Agmark, Banking and senior officers of the Board attended the conference. The discussions were mainly on matters connected with cardamom trade, both internal and external markets. Resolutions were passed on Agmark, shipping problems, air lifting, export duty, sales tax, financing etc. and the conference entrusted the Cardamom Traders' Chamber with the follow-up work. On behalf of the Cardamom Board Shri S. G. Sundaram, Chairman, Cardamom Board assured all assistance for the implementation of the resolutions.

Presiding over the conference Shri S.G. Sundaram thanked all the interests connected with the cardamom industry for their wholehearted co-operation extended to him for the last 2½ years and wished he could get the same in future also to serve the cardamom industry better. He also thanked his colleagues and staff in the Board for their co-operation and assistance which enabled him to render better service to the industry.

Shri J.M. Gandhi, M/s. Gandhi Sons, Bombay inaugurated the conference. S/Shri Balu Alagunan, Vice Chairman, Cardamom Board

thanked Shri S. G. Sundaram, Chairman, Cardamom Board for his tiresome efforts to make this vision true.

A large number of planters and senior officers of the Board were present on the occasion. Shri K. G. Nayar, Secretary, Cardamom Board welcomed the gathering. S/Shri K. N. Ravindran Nair Planter, Udumbanchola; Jagannatha Rajan, Secretary, Cardamom Grower's Club, Kalkoonthal K. A. Poulouse, Cardamom Grower's Club, Chembalam spoke on the occasion. Shri Thomas

Mathews, Farm Manager, Cardamom Board, proposed a vote of thanks.

In addition to the above main Research Station, the Board proposes to establish two Regional Research Stations in Karnataka and Tamilnadu. The estates for the same are expected to be finalised shortly.

The main Research Station in Udumbanchola is expected to be formally inaugurated by the Union Commerce Minister in August 1978.

V. N. Surulivel Nadar, S.P.G.R. Nithyanandan, S.Vallinayagam, K. Subbalah, and V. Rajappan spoke on the occasion. All the speakers congratulated the Chairman, Cardamom Board for his concerted efforts for up-lifting the cardamom industry which resulted in the record earnings of Rs. 48 crores during 1977-78. The export performance both quantitatively and in terms of earnings have been excellent during 1977-78.

Shri Ratanlal of M/s. Radhey Shyam Ratanlal, New Delhi released a souvenir brought out to commemorate the occasion.

During the group discussions on 10th, Chairman, Cardamom Board and officials representing Agmark, banking and tax suitably answered the queries of the various traders.

Laurels To Synthite Chemicals

M/s. Synthite Industrial Chemicals (p) Limited, Kolencherry have won Government of India's certificate of merit for their best export performance in oleoresins of spices for the year 1976-77. M/s. Synthite Industrial Chemicals have been exporting spice oils and oleoresins from 1972 onwards mainly to U S A., U K. and West Europe.

S. G. Sundaram, Chairman, Rubber Board

Cochin May 17:

Shri S. G. Sundaram, I.A.S., Chairman cardamom Board assumed the office of Chairman, Rubber Board here to-day from Shri T.V. Antony, Joint Secretary, Ministry of Commerce. This is in addition to his duties as chairman, Cardamom Board.

TFA Co-ordinates Fairs/Exhibitions

The Trade Fair Authority of India has proposed to organise the following foreign Fairs/Exhibitions during 1978-79:

- | | | |
|--|---|------------------------------------|
| 1. Budapest International Trade Fair, Budapest (Hungary) | : | September 22 to October 1 1978 |
| 2. Indian Trade Exhibition, Jakarta (Indonesia) | : | September 1978 |
| 3. Indian National Exhibition, Moscow | : | 1st to 31st August 1978 |
| 4. Tehran International Trade Fair, Tehran (Iran) | : | 19th September to 1st October 1978 |
| 5. Damascus International Trade Fair, Syria | : | July 1978 |
| 6. Indian Textile Show at Montreal & Toronto (Canada) | : | September 1978 |
| 7. International Consumer Goods Fair, Stockholm (Sweden) | : | August 25 to September 3, 1978 |
| 8. Baghdad International Trade Fair, Baghdad (Iraq) | : | 1st to 15th October 1978 |
| 9. Indian Exhibition at Doha, Qatar | : | Dates to be fixed |
| 10. Tripoli International Trade Fair, Tripoli (Libya) | : | 1st to 20th March 1979 |
| 11. Leipzig International Trade Fair, Leipzig (G.D.R.) | : | 12th to 19th March 1979 |

Those who are desirous of participating in any of these Fairs/Exhibitions may contact Trade Fair Authority of India, Pragati Maidan, Lal Bahadur Shastri Marg, New Delhi - 110 001 for further details.

Board's Participation in Fairs/Exhibitions

The Board has decided to participate in the following foreign Fairs/Exhibitions during 1978-79:

- | | | |
|---|---|------------------------|
| 1. Indian National Exhibition, Moscow, U.S.S.R. | : | 1st-31st August 1978 |
| 2. Food Products Fair, Gothenburg, Sweden | : | 10th-13th October 1978 |
| 3. Hoteres & Foodex Fair, Tokyo, Japan | : | March 1979 |
| 4. India Exhibition at Doha, Qatar | : | Date not fixed |

Those who are interested in participating in any of these Fairs, Exhibitions may contact the Board for further details.

CULTIVATION OPERATIONS

JULY

	South West Monsoon areas (Kerala - Tamilnadu)	North East Monsoon areas (Tamilnadu)	South West Monsoon areas (Karnataka)
Primary Nursery	Uprooting of seedlings for transplanting to secondary nursery beds.	Weeding-repair and maintenance of beds, pandals etc. watering if necessary.	Routine maintenance of the left over seedlings.
Secondary Nursery	Uprooting seedlings for transplanting to field-Transplanting to the newly formed secondary beds, seedlings uprooted from primary beds, followed by mulching with dried leaves or grass.	Watering if required - mulching-routine upkeep- Uprooting well-2rown secondary seedlings for planting in field, if weather permits.	Uprooting of seedlings for planting continued if weather permits.
Starting of New Plantations	Planting shade trees according to necessity continued-planting cardamom seedlings uprooted from secondary nursery staking them, mulching the base of the plants-first round weeding.	Planting, mulching and staking continued depending on receipt of rains. Manuring of last years new planted areas.	Planting of seedlings, mulching and staking continued if weather permits. Maintenance of drains.
Maintenance of plantations	Thrips control-Filling up of gaps caused due to removal of katte affected plants or due to drought, falling of trees etc. planting shade trees where necessary.	Gap filling-first round weeding, mulching and earthing up continued-Thrips control.	Watch and Ward-drainage maintenance.

AUGUST

Primary Nursery	No work	Watering according to necessity-routine upkeep-Mulching	Clearing new site, digging, collecting and removing roots, stumps, stones etc.-preparation of beds, breaking colds and spreading well decomposed farmyard manure or jungle soil-Broadcast Super Phosphate evenly and stir slightly—select disease - free and high yielding plants for seed collection.
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	South West Monsoon areas (Kerala - Tamilnadu)	North East Monsoon areas (Tamilnadu)	South West Monsoon areas (Karnataka)
Secondary Nursery	Watering according to necessity depending on rains-starting first round weeding towards end of the month.	Second round mulching-plant protection measures-watering Clearing site for new secondary nursery, first digging and removal of stumps, stubbles etc.	Uprooting of seedlings for transplanting to field completed-Digging, clearing, preparing beds and transplanting seedlings left over in the primary nursery - Mulching with paddy husk - routine watering-Erect shade pandals.
Starting of New Plantations	First round weeding continued planting shade trees according to necessity continued.	Clearing of footpaths, roads, drainage channels etc.	Planting seedlings, mulching and staking depending on weather conditions, completed - Filling up gaps in previous year's planted areas-planting shade trees where necessary.
Maintenance of Plantations	Second round weeding- Thrips control-starting first round harvest towards month end.	Thrips control - Ist round harvest towards month end	Weeding-first round harvest, curing, storage etc.

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